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Surface Versus Air Transportation Analysis (Automatic Downgrade Endeavor)

OPERATIONS RESEARCH AND ECONOMIC ANALYSIS OFFICE

DEPARTMENT OF DEFENSE

DEFENSE LOGISTICS AGENCY

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Charles H. Shaw III, CPT(P) USA

DEPARTMENT OF DEFENSE
DEFENSE LOGISTICS AGENCY
OPERATIONS RESEARCH AND ECONOMIC ANALYSIS OFFICE
CAMERON STATION
ALEXANDRIA, VA 22304-6100

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DEFENSE LOGISTICS AGENCY
HEADQUARTERS
CAMERON STATION
ALEXANDRIA, VIRGINIA 22304-6100

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FOREWORD

This report documents analysis of the Defense Logistics Agency (DLA) Automatic Downgrade Endeavor. Under this program, the U.S. Army has permitted DLA to automatically downgrade Issue Priority Group/Transportation Priority I (IPG/TP I) shipments from air to surface transportation modes during a 1-year test period. The Automatic Downgrade Endeavor does not apply to Not Mission Capable Status (NMCS) or other "999" Required Delivery Date (RDD) Shipments nor any overseas shipments. This project evaluates the initial 6 months of the program covering the period from 1 February through 31 July 1989. The analysis determined the total number of IPG/TP I shipment downgrades during the test period, the related processing and transit times for those shipments, the actual surface transportation costs of those shipments, and the associated transportation costs via an air freight carrier. These figures and the calculated cost differential between surface and air modes, which amounted to approximately $3.449 million a year at existing levels of traffic and current rates, will be used to determine the feasibility of continuing the program. The report recommends that DLA continue with the Automatic Downgrade Endeavor and monitor system performance to determine if the dollar cost savings versus increased shipment times is cost effective in the future.

ROGER C. ROY
Assistant Director
Office of Policy and Plans

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EXECUTIVE SUMMARY

The U.S. Army has permitted the Defense Logistics Agency (DLA) to automatically downgrade Issue Priority Group/Transportation Priority I (IPG/TP I) shipments from air to surface transportation modes during a 1-year test period. The Automatic Downgrade Endeavor does not apply to Not Mission Capable Status (NMCS) or other "999" Required Delivery Date (RDD) Shipments. It also does not apply to any overseas shipments. This project evaluates the initial 6 months of the program covering the period from 1 February through 31 July 1989.

This analysis is conducted to determine the total number of IPG/TP I shipment downgrades during the test period, the related processing and transit times for those shipments, the actual surface transportation costs of these shipments, and the associated transportation costs via an air freight carrier. These figures, along with the calculated cost differential between surface and air modes, will be used to determine the feasibility of continuing the program on a permanent basis.

The Automatic Downgrade Endeavor does save the Department of Defense (DOD), based on U. S. Army downgrades, approximately $3.449 million a year at existing levels of traffic and current rates. There is a mean increase of approximately 2.5 days per shipment in total processing/transit time. This is primarily due to a mean increase of approximately 2.6 days per shipment in transit time with a minimal decrease in processing time.

It is recommended that DLA continue with the Automatic Downgrade Endeavor while monitoring system performance to determine if the dollar cost savings versus increased shipment times is cost effective.

The methodology and analysis used several data sources to compile a data base on shipments during the test period and then performed two separate sets of calculations. The first set of calculations determines the descriptive statistics relating to processing and transportation times for shipments during the test period, while the second set of calculations determines surface and air transportation costs for each shipment and renders the actual cost savings due to the downgrade. Analysis is also conducted using both procedures between the depots and various surface modes of transportation.

1. INTRODUCTION. The Defense Logistics Agency's (DLA) Directorate of Supply Operations, Transportation Division (DLA-OT) requested a cost benefit analysis of the DLA Automatic Downgrade Endeavor in February 1989. DLA-OT subsequently requested this office perform the analysis for a 6-month test period conducted from February through July 1989. This analysis is performed in order to provide key information to DLA and U.S. Army officials considering the potential benefits of the program and subsequent continuation of the program. This analysis determines the descriptive statistics surrounding processing and transit times for the program, along with the actual dollar cost savings for the test period. However, this study does not attempt to relate potential trade-offs in time versus dollars.

A. Background.

The U.S. Army has permitted DLA to automatically downgrade Issue Priority Group/Transportation Priority I (IPG/TP I) shipments from air to surface transportation modes during a 1-year test period. An analysis based on the initial 6 months of the test will be used to evaluate the cost and benefits of the program and to assist DLA and the U.S. Army in the final decision to continue with the program on a permanent basis.

The Automatic Downgrade Endeavor does not apply to Not Mission Capable Status (NMCS) or other "999" Required Delivery Date (RDD) Shipments. It also does not apply to any overseas shipments. This project evaluates the initial 6 months of the program covering the period from 1 February through 31 July 1989.

B. Purpose. This analysis is conducted to determine the total number of IPG/TP I shipment downgrades during the test period, the related processing and transit times for those shipments, the actual surface transportation costs of these shipments, and the associated transportation costs via an air freight carrier. These figures, along with the calculated cost differential between surface and air modes, will be used to determine the feasibility of continuing the program on a permanent basis.

C. Scope.

1. The analysis covers the test period from 1 February through 31 July 1989.

2. The analysis covers only Continental U.S. (CONUS) IPG/TP I shipments which are not NMCS or "999" RDD coded.

D. Objectives.

1. Determine the total number of IPG/TP I downgrades during the test period.

2. Determine the statistics for the processing and transit times of the shipments.

3. Determine the actual costs of the shipments during the test period.

4. Determine the corresponding costs of moving the same shipments via an air freight forwarder or small parcel air carrier during the test period.

5. Calculate the actual cost differential between air versus surface shipment modes for shipments during the test period.

6. Compare processing and transit times and any cost savings between the actual Automatic Downgrade Endeavor results and estimated non-downgrade statistics.

II. CONCLUSIONS. The results of the calculations and analysis cover two distinct topics, one being the impact on shipment times and the second being dollar cost savings. A brief explanation along with a tabular compilation for the total of all shipments are provided in the next two sections.

A. Descriptive Statistics for Processing and Transportation.

There were a total of 40,916 shipments out of a possible 61,500 downgraded shipments for which complete processing and transit dates could be identified. This is about 66.5 percent of the data base and represents a significant statistical basis for calculation of the descriptive statistics. The sample mean and variance are assumed to be equivalent to the population mean and variance due to the extremely large sample size. Statistics for the downgraded shipments were compared to statistics for air shipments from the first quarter FY 1989 which were primarily based on "Second-Day Air Service" or SAS. These shipments had a mean transit time of 2.03 days. The results in days based on all downgraded shipments are shown in Table 1 below.

Table 1

DESCRIPTIVE STATISTICS FOR ALL SHIPMENTS

Time Stats	Process Time	Transit Time	Total Time
Freq	40916	40916	40916
Mean	1.791	7.955	9.746
Median	1.000	6.000	8.000
Mode	0.000	6.000	5.000

Shipments are categorized by small parcel or freight depending on weight with all shipments totaling 100 pounds or more falling into the freight category. The final data base, derived from the first quarter 1990 update, used data from multiple sources resulting in the final 61,500 downgraded shipments with 40,916 usable order, ship, and receipt date information fields. Small parcel shipments accounted for 36,431 of the 61,500 shipments or about 59.2 percent of the total data base. Small parcel shipments comprised 20,124 of the 40,916 shipments used to calculate time statistics. There were significant shifts in

some key statistics when the large amount of small parcel shipment data was included. The data base was examined based on the mode of shipment and depot due to this observation. Statistics by freight shipments and small parcel (Mode 5) shipments are shown in Tables 2 and 3 below. All statistics reflect whole days.

Table 2

DESCRIPTIVE STATISTICS FOR ALL FREIGHT SHIPMENTS

Time Stats	Process Time	Transit Time	Total Time
Freq	20792	20792	20792
Mean	3.390	4.633	8.023
Median	3.000	4.000	7.000
Mode	1.000	3.000	5.000

It is interesting to note that the statistics obtained for purely freight shipments are nearly identical between depots and normally small parcels are much easier to pick, pack, ship, and transport than are such freight shipments. However, this was not the case with the final data base. While the processing time needed to pick, pack, and ship small parcels is much less; as observed in Table 3; the transit time for United Parcel Service (UPS) and other carriers appears to be inordinately high. There appears to be a problem in the data collection for small parcel shipments. Unfortunately, receipt date information can only be obtained from the consignee as reflected by the D6S pick-up receipt dates submitted for small parcel shipments which are suspect due to inclusive handling and processing time at the point of receipt.

Table 3

DESCRIPTIVE STATISTICS FOR ALL MODE 5 SHIPMENTS

Time Stats	Process Time	Transit Time	Total Time
Freq	20124	20124	20124
Mean	0.139	11.388	11.527
Median	0.000	10.000	10.000
Mode	0.000	5.000	5.000

The transit time calculated for the majority of such shipments is equivalent to the total order-receipt time for the consignee which is correct with respect to the supply system but not accurate with respect to the transportation system. The published standards provided by UPS, the United States Postal Service (USPS), and Roadway Package Service (RPS) reflect a maximum of 8 days anywhere in CONUS. These small parcel carriers tend to be much faster and more efficient than freight carriers which is why they are so frequently used. Therefore, it is inconceivable that all small parcel carriers should have a mean transit time 7 days longer, 11.4 versus 4.6 days, than all freight carriers. Due to this fact, the time statistics based on inclusion

of small parcel carriers are not used further in this analysis or resultant conclusions. A more detailed examination of these results is provided in Section V., Analysis.

B. Dollar Cost Savings for the Test Period.

The dollar cost savings for the 6-month test period are based on the actual surface transportation costs for the 61,500 shipments obtained from the Material Release Order/Government Bill of Lading (MRO/GBL) data; as well as, the cost of air freight transportation for all shipments calculated using actual weights, origins, destinations, and Fiscal Year (FY) 1989 rates. This results in actual dollar cost savings and not estimates. Cost and savings figures for all shipments in whole dollars are shown in Table 4.

Table 4

COST AND SAVINGS FOR ALL SHIPMENTS

Category	Total For All Shipments
Number of Shipments	61,500
Surface Cost	923,631
Air Cost	2,648,330
Cost Savings	1,724,699
Estimated Annual Savings	3,449,000

C. Benefits. The Automatic Downgrade Endeavor does save the Department of Defense (DOD), based on U.S. Army downgrades, approximately $3.449 million a year at existing levels of traffic and current rates with a mean increase of approximately 2.5 days per shipment in total processing/transit time excluding small parcel shipments.

III. RECOMMENDATIONS

- Continue with the Automatic Downgrade Endeavor.
- Monitor system performance to determine if the dollar cost savings versus increased shipment times are cost effective.
- Implement procedures to accurately collect small parcel transit data.

IV. METHODOLOGY

A. Establish the Data Base.

1. The study utilizes Depot Material Release Order (DMRO) files generated under the Mechanization of Warehousing and Shipment Processing (MOWASP) system for the six DLA Depots. These files were consolidated, along with Military Standard Requisitioning and Issue Procedure(MILSTRIP) source data, into a Combined Material Release Order (CMRO) file for each

quarter of FY 1989. The appropriate set of shipments were then selected based on:

a. Depot or Consignor code for the six DLA depots.

b. Department of Defense Activity Address Codes beginning with "A" or "W" for Army.

c. Transportation Mode codes A,B,D,I,K,L,M,S,5, or 9 for methods of surface transportation.

d. Issue Priority Designator codes 01, 02, or 03 for IPG/TP I.

e. Required Delivery Date (RDD) code not "999" or NMCS.

f. Destination codes for CONUS activities only.

2. The study utilizes Intransit Data Card (IDC) files based on the Military Supply and Transportation Evaluation Procedures (MILSTEP) for FY 1989 to obtain additional information on transportation times. These data are added using a Transportation Control Number (TCN) matching routine.

3. The study structures the complete data file to include the following variables for use:

a. Depot or Consignor.

b. Transportation mode.

c. Delivery state.

d. Ship-to-address.

e. Transportation Control Number.

f. Total weight.

g. Total cube.

h. Transportation cost.

i. Offer date.

j. Ship date.

k. TK4/receipt date.

4. The study develops two primary data input files based on data available for the 61,500 shipments. One file is for calculation of the descriptive statistics and includes only those shipments for which complete date fields are included. The second file consists of the entire shipment data set which is used to compute actual transportation costs.

5. There are also four additional data input files which are manually entered for the current (FY 1989) air freight rates. These are organized as to shipments less than 100 pounds and greater than or equal to 100 pounds, depot, and delivery region. These data were obtained via a data call to all depots from DLA-OT. A fifth additional file is also developed in order to identify activities and shipments destined to the New York and Los Angeles Enhanced DLA Distribution System (EDDS) regions.

B. Calculation of Descriptive Statistics.

1. One program, using the Model 204 Data Base Management System, determines the total number of TP I downgraded shipments by conducting a frequency count on the data base and then performs the same procedure for each depot.

2. Another program, using the SPSS-X statistical package, calculates the mean, median, standard deviation, and other statistics on the processing time, transit time, and total shipment time for all TP I downgraded shipments. This program also performs the same procedure for each depot, surface mode, and mode by depot. These calculations are based on only those instances where complete date information is available.

C. Calculating Dollar Cost Savings for the Test Period.

1. A FORTRAN based program was developed to calculate actual surface transportation costs.

a. It extracts the given transportation cost for each shipment from the data base and calculates any missing costs for surface transportation based on the weight, consignor, and ship-to-address using FY 1989 freight rates.

b. It then sums the total cost of surface transportation for all shipments and performs the same procedure for each depot.

c. It next calculates the air freight cost for each shipment in the database based on the weight, consignor, and delivery state using FY 1989 air freight rates obtained via the data call to all depots and reads into the program from input files.

d. It also sums the total cost of air transportation for all shipments and performs the same procedure for each depot.

e. Finally, it calculates the transportation cost differentials by subtracting the actual cost of surface transportation from the calculated air transportation cost for all shipments and by each depot.

V. ANALYSIS

The analysis of this data and resulting calculations is quite straight forward. The statistics program developed using the SPSS-X statistical package determined the descriptive statistics for the test period. The sample means and variances are assumed to be equivalent to the population means and variances due to the extremely large sample size; therefore, construction of confidence intervals and further testing are not necessary. The results of this program are shown in Tables 1 through 3 addressed previously and Tables 5 through 24 below which give statistics by mode and depot. All statistics reflect whole days.

Table 5

DESCRIPTIVE STATISTICS FOR ALL SHIPMENTS FROM TRACY

Time Stats	Process Time	Transit Time	Total Time
Freq	6389	6389	6389
Mean	2.399	6.846	9.246
Median	1.000	6.000	8.000
Mode	0.000	3.000	5.000
Std Dev	3.382	5.315	5.450

Table 6

DESCRIPTIVE STATISTICS FOR ALL SHIPMENTS FROM MECHANICSBURG

Time Stats	Process Time	Transit Time	Total Time
Freq	5438	5438	5438
Mean	1.316	9.694	11.010
Median	0.000	8.000	9.000
Mode	0.000	1.000	5.000
Std Dev	2.335	7.224	6.759

Table 7

DESCRIPTIVE STATISTICS FOR ALL SHIPMENTS FROM COLUMBUS

Time Stats	Process Time	Transit Time	Total Time
Freq	5026	5026	5026
Mean	0.496	10.910	11.406
Median	0.000	9.000	9.000
Mode	0.000	4.000	5.000
Std Dev	1.289	7.430	7.254

Table 8

DESCRIPTIVE STATISTICS FOR ALL SHIPMENTS FROM MEMPHIS

Time Stats	Process Time	Transit Time	Total Time
Freq	10268	10268	10268
Mean	2.089	6.974	9.063
Median	1.000	5.000	7.000
Mode	0.000	1.000	5.000
Std Dev	2.243	6.170	5.805

Table 9

DESCRIPTIVE STATISTICS FOR ALL SHIPMENTS FROM RICHMOND

Time Stats	Process Time	Transit Time	Total Time
Freq	8478	8478	8478
Mean	1.255	8.947	10.202
Median	0.000	7.000	8.000
Mode	0.000	5.000	5.000
Std Dev	2.768	6.754	6.470

Table 10

DESCRIPTIVE STATISTICS FOR ALL SHIPMENTS FROM OGDEN

Time Stats	Process Time	Transit Time	Total Time
Freq	5317	5317	5317
Mean	3.050	5.031	8.080
Median	2.000	4.000	6.000
Mode	0.000	1.000	6.000
Std Dev	3.443	4.998	5.730

The variation in transit times seen in Tables 2 and 3 between small parcel (Mode 5) shipments and freight shipments is significant. Due to this fact, further analysis by mode between the depots was conducted to determine if major differences existed at particular locations with respect to each mode. This could create undue influence in some calculations, skewing the data and results. Table 11 provides statistics for all small parcel shipments with complete data and Tables 12 through 17 provide statistics for small parcel shipments by depot.

Table 11

DESCRIPTIVE STATISTICS FOR ALL MODE 5 SHIPMENTS

Time Stats	Process Time	Transit Time	Total Time
Freq	20124	20124	20124
Mean	0.139	11.388	11.527
Median	0.000	10.000	10.000
Mode	0.000	5.000	5.000
Std Dev	0.724	7.040	7.046

Comparison of the transit time statistics for all small parcel shipments in Table 11 versus each depot in Tables 12 through 17 below do not indicate any particular variations due to location or depot. The differences in transit times with other modes appear to be a function of the mode itself unless an anomoly exists in the freight shipments by location which is also evaluated.

Table 12

DESCRIPTIVE STATISTICS FOR MODE 5 SHIPMENTS FROM TRACY

Time Stats	Transit Time	Total Time
Freq	2279	2279
Mean	10.569	10.626
Median	9.000	9.000
Mode	5.000	5.000
Std Dev	6.456	6.489

Table 13

DESCRIPTIVE STATISTICS FOR MODE 5 SHIPMENTS FROM MECHANICSBURG

Time Stats	Transit Time	Total Time
Freq	3739	3739
Mean	11.830	11.847
Median	10.000	10.000
Mode	5.000	5.000
Std Dev	7.120	7.118

Table 14

DESCRIPTIVE STATISTICS FOR MODE 5 SHIPMENTS FROM COLUMBUS

Time Stats	Transit Time	Total Time
Freq	4066	4066
Mean	12.383	12.565
Median	11.000	11.000
Mode	5.000	6.000
Std Dev	7.458	7.462

Table 15

DESCRIPTIVE STATISTICS FOR MODE 5 SHIPMENTS FROM MEMPHIS

Time Stats	Transit Time	Total Time
Freq	3247	3247
Mean	11.541	11.747
Median	10.000	10.000
Mode	7.000	5.000
Std Dev	7.011	6.991

Table 16

DESCRIPTIVE STATISTICS FOR MODE 5 SHIPMENTS FROM RICHMOND

Time Stats	Transit Time	Total Time
Freq	6095	6095
Mean	10.729	10.896
Median	9.000	9.000
Max	30.000	36.000
Std Dev	6.872	6.886

Table 17

DESCRIPTIVE STATISTICS FOR MODE 5 SHIPMENTS FROM OGDEN

Time Stats	Transit Time	Total Time
Freq	698	698
Mean	10.950	11.196
Median	9.000	9.000
Mode	6.000	6.000
Std Dev	6.601	6.625

Analysis of all freight shipments and then freight shipments by depot is necessary to insure no extreme differences exist between locations skewing the statistical analysis as observed between modes. Table 18 provides statistics for all freight shipments and Tables 19 through 24 provide transit time statistics for freight shipments by depot. Time statistics reflect whole days.

Table 18

DESCRIPTIVE STATISTICS FOR ALL FREIGHT SHIPMENTS

Time Stats	Process Time	Transit Time	Total Time
Freq	20792	20792	20792
Mean	3.390	4.633	8.023
Median	3.000	4.000	7.000
Mode	1.000	3.000	5.000
Std Dev	3.069	3.931	4.897

There are also no significant variations in transit time statistics due to location or depot after comparing Table 18 results with Tables 19 through 24. This confirms that the variation in transit time statistics is strictly a result of the mode since it occurs between surface small parcel shipments and surface freight shipments only.

Table 19

DESCRIPTIVE STATISTICS FOR FREIGHT SHIPMENTS FROM TRACY

Time Stats	Transit Time	Total Time
Freq	4110	4110
Mean	4.782	8.480
Median	4.000	8.000
Mode	3.000	7.000
Std Dev	2.975	4.604

Table 20

DESCRIPTIVE STATISTICS FOR FREIGHT SHIPMENTS FROM MECHANICSBURG

Time Stats	Transit Time	Total Time
Freq	1699	1699
Mean	4.992	9.168
Median	4.000	8.000
Mode	1.000	6.000
Std Dev	4.927	5.459

Table 21

DESCRIPTIVE STATISTICS FOR FREIGHT SHIPMENTS FROM COLUMBUS

Time Stats	Transit Time	Total Time
Freq	960	960
Mean	4.674	6.498
Median	4.000	6.000
Mode	4.000	5.000
Std Dev	2.321	3.138

Table 22

DESCRIPTIVE STATISTICS FOR FREIGHT SHIPMENTS FROM MEMPHIS

Time Stats	Transit Time	Total Time
Freq	7021	7021
Mean	4.862	7.822
Median	4.000	7.000
Mode	1.000	5.000
Std Dev	4.340	4.670

Table 23

DESCRIPTIVE STATISTICS FOR FREIGHT SHIPMENTS FROM RICHMOND

Time Stats	Transit Time	Total Time
Freq	2383	2383
Mean	4.388	8.427
Median	4.000	7.000
Mode	5.000	6.000
Std Dev	3.549	4.824

Table 24

DESCRIPTIVE STATISTICS FOR FREIGHT SHIPMENTS FROM OGDEN

Time Stats	Transit Time	Total Time
Freq	4619	4619
Mean	4.136	7.609
Median	3.000	6.000
Mode	1.000	6.000
Std Dev	4.011	5.430

The complete data set was utilized in the FORTRAN program to determine a number of facts associated with the Automatic Downgrade Endeavor. The number of shipments, surface transportation costs, calculated air transportation costs, and any savings are provided in Table 4 shown previously and Table 25 below which gives data by depot. Cost and savings figures are in whole dollars.

Table 25

COST AND SAVINGS FOR SHIPMENTS BY DEPOT

	SA	SB	SC	SM	SR	SU
Number Shipped	8,875	9,188	9,832	14,750	12,388	6,467
Surface Cost	159,082	195,918	72,749	292,540	128,114	75,228
Air Cost	459,637	294,115	217,982	943,804	409,422	323,370
Savings	300,555	98,197	145,233	651,264	281,308	248,142

These figures were compared to those obtained from the "Depot Traffic Analysis Study", DLA-90-C81037, conducted in November 1989 with respect to numbers of shipments and dollar costs in the air freight categories. The numbers are comparable to figures obtained for FYs 1987 and 1988.

It should be noted that some included shipments passed through the New York and Los Angeles EDDS sites. There were a total of 2785 shipments through EDDS with 1023 passing through New York and 1762 through Los Angeles during the 6-month test period. This only represents 4.5 percent of all downgraded shipments.

A comparison of freight modes versus surface small parcel carriers (Mode 5) reflects existing problems with data collection and reporting for small parcel shipments. MILSTRIP reporting procedures using D6S and other information are the only method to obtain receipt dates for shipments from carriers such as United Parcel Service (UPS) which provides approximately 95 percent of this service. MILSTRIP data does not appear to be timely with respect to actual delivery dates which are not normally the same. Therefore, statistics for normal freight shipments provide the most realistic representation of the transportation system's performance.

Actual transportation cost savings have been determined. Processing time for requisitions reflect no significant change due to the program as compared to FYs 1987 and 1988. Transit and total shipment times have changed and were previously based on "Second-Day Air Service" or SAS for small parcel air

shipments less than 100 pounds and standard air delivery times for other shipments. Information from the U.S. Army Logistics Control Activity (LCA) Pamphlet 700-1, LCA Information Brochure, reflects air service times of 3.0 days in 1979 down to 1.8 days in 1987. More current statistics were not available. An examination of the current statistics based on MILSTEP data for air shipments from the first quarter of FY 1989 was then performed to determine a mean transit time of 2.03 days for SAS. Downgrading resulted in an increase in mean transit time from 2.03 days to 4.63 days or an increase of about 2.6 days. The standard deviation of all transit times was moderate at about 3.93 days for downgraded shipments. There appeared to be no significant variation due to depot or location and no further analysis was conducted between depots. However, due to the impact of the surface mode of delivery, a comparison was conducted by depot between the different modes. There was no variation between the depots by mode; the differences between modes were consistent throughout the analysis between depots.

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HQ Defense Logistics Agency
Operations Research and Economic Analysis Office (DLA-LO)
Cameron Station
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13. ABSTRACT (Maximum 200 words)

This report documents analysis of the Defense Logistics Agency (DLA) Automatic Downgrade Endeavor. Under this program, the U.S. Army has permitted DLA to automatically downgrade Issue Priority Group (IPG)/Transportation (TP) I shipments from air to surface transportation modes during a 1-year test period. The Automatic Downgrade Endeavor does not apply to Not Mission Capable Status or other "999" required delivery date shipments nor any overseas shipments. This project evaluates the initial 6 months of the program covering the period from 1 February through 31 July 1989. The analysis determined the total number of IPG/TP I shipment downgrades during the test period, the related processing and transit times for those shipments, the actual surface transportation costs of those shipments, and the associated transportation costs via an air freight carrier. These figures and the calculated cost differential between surface and air modes, which amounted to approximately $3.449 million a year at existing levels of traffic and current rates, will be used to determine the feasibility of continuing the program. The report recommends that DLA continue with the Automatic Downgrade Endeavor and monitor system performance to determine if the dollar cost savings versus increased shipment times is cost effective in the future.

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